

**ARCS Radiometer Calibration Check Using Comparison Instruments Form****I. Calibration information**

This is a (check which):	Calibration	Calibration Check	Field Calibration	
		<b>X</b>		
Date:	GMT Begin Time:	GMT End Date:	GMT End Time:	ARCS #
8/21/2002	09:20			<b>3</b>
	MM/DD/YY	MM/DD/YY		
	SKYRAD	GNDRAD		CAL Logger
Old configuration version	V020325.00	V020316.00		V020815.01
New configuration version	V020822.00			V020817.00
Instrument / System:	TWP OMS Part Number(s):	Changed?	TWP OMS Serial Number(s):	Cal Factor
PIRGshaded	PIR	<b>x</b>	31390F3	4.18e-6
PIRDshaded	PIR	<b>x</b>	31307F3	3.49e-6
PSPG	PSP	<b>x</b>	31284F3	8.18E-06
PSPD	Aug-48		33386	9.02e-6
UVB	501A V3		2870	
IRT	KT19.85		nr867	
NIP	NIP	<b>x</b>	31350E6	8.259
NET	REBS Q*7.1	<b>gone</b>		
PIR GNDRAD	PIR		30168F6	3.96e-6
PSP GNDRAD	PSP		29914F6	8.053e-6
MFRSR	MFR7-HEAD / MFRSR- Logger Board		0043/23AF	
Tracker	KZ		189	

Verify that serial number of test instruments above are correct. (yes / no)

**yes**

Location (eg. PNNL, Manus):	Participant(s):	Issued by:	Signature(s):
Darwin	John, Bill Porch		

## Spares

Reference Instrument(s):	TWP OMS Part Number(s):	TWP OMS Serial Number(s):	Calibration Coefficients
PIR1	PIR	31300F3	3.41e-6
PSP1	PSP	31293F3	8.050e-6
NIP1top	NIP	31875E6	8.47e-6
PSP2	PSP	33386	9.12e-6
MFRSR	MFR7-HEAD / MFRSR- Logger Board	none	none
NIP2	NIP	none	none
PIR2	PIR	31305F3	3.70E-06

Verify that serial numbers of reference instruments are correct (yes/no)

yes

Verify with mentor that calibration coefficients and configuration file changed accordingly for PIRs, PSPs, and NIPs. (yes / no)

**II. Initial Values**

note: the following are determined from sample values of voltages from the logger during unobscured sun conditions if possible (using ARM calculator or other technique)

Sensor / Element	value Reference (usually spare instr.)	Value of SKYRAD Instr.	% Difference: SKYRAD and Spare	Time (GMT)	Sun Obscured? (Yes/No)
PIR1C & PIRG (W/m2)	356.59	358.77	0.61%	12:00	no
PIR2C & PIRD (W/m2)	358.18	359.89	0.40%	12:00	no
PIR1C & PIRG (Td oC)					
PIR2C & PIRD (Td oC)					
PIR1C & PIRG (Tc oC)					
PIR2C & PIRD (Tc oC)					
PSP1C & PSPG (W/m2)	863.22	860.57	0.31%	2:30	no
PSP2C & PSPG (W/m2)	848.61	860.57	1.30%	2:30	no
NIP1C & NIP (W/m2)	780.08	747.62	4.10%	2:30	no
NIP2C & NIP (W/m2)					
PIRD & PIR GNDRAD (W/m2)					
PSPG & PSP GNDRAD (W/m2)					
IRT oC					
NET (W/m2)					
MFRSR (W/m2 @615 nm)					

### III. Final Values

Sensor / Element	Value Reference (usually spare instr.)	Value of SKYRAD Instr.	% Difference: SKYRAD and Spare	Time (GMT)	Sun Obscured? (Yes/No)
PIR1C & PIRG (W/m2)					
PIR2C & PIRD (W/m2)					
PIR1C & PIRG (Td oC)					
PIR2C & PIRD (Td oC)					
PIR1C & PIRG (Tc oC)					
PIR2C & PIRD (Tc oC)					
PSP1C & PSPG (W/m2)					
PSP2C & PSPG (W/m2)					
NIP1C & NIP (W/m2)	780.08	762.14	2.40%	2:30	no
NIP2C & NIP (W/m2)					
PIRD & PIR GNDRAD (W/m2)					
PSPG & PSP GNDRAD (W/m2)					
IRT oC					
NET (W/m2)					
MFRSR (W/m2 @615 nm)					

**IV. Statistics**(if applicable)

No. of Samples:

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Begin Date /  
Time

GMT

--

End Date /  
Time

GMT

--

**V. Calibration Change**(if applicable)

Sensor or Parameter

Sensor Serial No.

Internal  
ResistanceOriginal  
Sensitivity

Offset

Quadratic

Old

New

Old

New

Old

New

Old

New

Old

New







Document(s) Referenced:

PRO(RAD)-001.001

Document(s) Updated:

PRO(RAD)-001.007

**PROBLEMS:**

There was a 14 w/m2 offset in the NIP channel on the callogger. When this was included the comparison was within tolerance. There was a problem with the PIR comparison during the day due to the shading difference. At night everything was OK. We did not include the gndrad in this comparison as we have not yet worked out a way to turn the Darwin system skyward.

**NOTES:**